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Amendments to Claims

Please amend the claims as follows:

1(currently amended). A method of detecting double-talk and path changes in an echo cancellation system including a Least Mean Squares adaptive filter for generating an echo cancellation signal, comprising:

    generating a cross correlation matrix

$$R = E[X\,X^T]$$

where E is the statistical expectation operator and

$$X = \begin{bmatrix} X_0 \\ X_1 \end{bmatrix} \text{ where}$$

X_0 is an echo path signal and X_1 is an estimated echo signal generated by said adaptive filter; and

    performing a matrix operation on said matrix R to generate a characteristic value determinative of the correlation between said signals X_0 and X_1; and ~~correlation based matrix of signals in said echo cancellation system; and~~

    ~~analyzing said correlation-based-matrix to~~ ~~identify~~ detecting the presence of double-talk and path changes occurring in said system from said characteristic value.

2 (canceled).

3(currently amended). A method as claimed in claim ~~2~~1, wherein said characteristic value is the determinant ~~a determinant~~ of said matrix ~~is used to detect said double-talk and path changes~~.

4.(currently amended) A method as claimed in claim 3, wherein said double-talk and path changes are inferred when ~~the value of~~ said determinant passes predetermined threshold values.

5(currently amended). A method as claimed in claim ~~2~~1, wherein said characteristic value comprises eigendecompositions of said matrix ~~are used to detect said double talk and path changes~~.

6(currently amended). A method as claimed in claim ~~2~~1, wherein said characteristic value comprises single valued decompositions of said matrix ~~are used to detect said double talk and path changes~~.

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7(currently amended). A method as claimed in claim 2, wherein said characteristic value comprises condition numbers of said matrix are used to detect said double-talk and path changes.

8(canceled).

9(canceled).

10(currently amended).   A method as claimed in claim 9 1, wherein said LMS Least Mean Square filter implements a normalized-LMS algorithm.

11(currently amended).   A method as claimed in claim 1, wherein the elements of said correlation-based matrix are generated in the time domain.

12(original).   A method as claimed in claim 1, wherein the elements of said correlation-based matrix are generated in the frequency domain.

13 (canceled)
14 (canceled)
15 (canceled)
16 (canceled)
17 (canceled)
18 (canceled)
19 (canceled)
20 (canceled)
21 (canceled)
22 (canceled)

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